

What is claimed is:

1. A segmented plate adapted for assembly within a confined area having a limited access thereto, comprising:

5           (a) the plate, as assembled, having  
            an exterior perimeter,  
            an aperture having an inner perimeter,  
            a plurality of generally rigid plate-sections, and  
            extending at least partially along adjacent boundaries of said plate-  
10          sections having been adjacently arranged, is a self-lock seam; and  
            (b) each of said plate-sections sized smaller than the access to permit passage  
            therethrough for the assembly.

2. The segmented plate of claim 1, having been assembled, and wherein:

15           (a) said inner perimeter comprises an inward-boundary of at least each of a  
            first and second of said plate-sections;  
            (b) a third and fourth of said plate-sections each comprise a respective third  
            and fourth edge-boundary; and  
            (c) said adjacent boundaries comprise  
20          said third edge-boundary adjacent a first edge-boundary of each of  
            said first and second plate-sections, and  
            said fourth edge-boundary adjacent a second edge-boundary of each  
            of said first and second plate-sections.

25   3. The segmented plate of claim 1, having been assembled, and wherein:

            (a) said inner perimeter comprises a first curved inward-boundary of a first  
            of said plate-sections and a second curved inward-boundary of a second of said  
            plate-sections;  
            (b) first and second collar pieces are arranged, in water-impermeable  
30          fashion, adjacent said first and second curved inward-boundaries; and  
            (c) said first and second collar pieces are further arranged around a  
            periphery of a central sub-assembly.

4. The segmented plate of claim 3 wherein:

(a) the confined area comprises a chamber of a deaerator tank and the assembled segmented plate is secured to enclose a tray assembly;

5 (b) said periphery of said central sub-assembly is generally circular and said central sub-assembly comprises a spray nozzle; and

(c) first and second top supports are arranged around said periphery and around said first and second collar pieces.

5. The segmented plate of claim 4 wherein:

10 (a) a third and fourth of said plate-sections each comprise a respective third and fourth edge-boundary;

(b) said adjacent boundaries comprise

said third edge-boundary adjacent a first edge-boundary of each of said first and second plate-sections, and

15 said fourth edge-boundary adjacent a second edge-boundary of each of said first and second plate-sections; and

(c) sandwiched between said first collar piece and said first top support are: a portion of said third edge-boundary, a portion of each of said adjacent first edge-boundaries of said first and second plate-sections, a portion of said first curved inward-boundary, and a portion of said second curved inward-boundary.

6. The segmented plate of claim 1, having been assembled, and wherein:

(a) said aperture comprises an opening in said exterior perimeter;

25 (b) said inner perimeter comprises an edge-boundary of a first of said plate-sections;

(c) a first collar piece is arranged, in water-impermeable fashion, adjacent said first edge-boundary; and

(d) said first collar piece is further arranged around at least a portion of a periphery of a sub-assembly having a vent passage therethrough.

7. The segmented plate of claim 6 wherein:
- (a) the confined area comprises a chamber of a deaerator tank;
  - (b) a third and fourth of said plate-sections each comprise a respective third and fourth edge-boundary; and
  - 5 (c) said adjacent boundaries comprise
    - said third edge-boundary adjacent a first edge-boundary of each of said first and second plate-sections, and
    - said fourth edge-boundary adjacent a second edge-boundary of each of said first and second plate-sections.
- 10 8. The segmented plate of claim 1 wherein:
- (a) the confined area comprises a chamber of a deaerator tank;
  - (b) said self-lock seam comprises an interlocking of an U-shaped edge of each said plate-section adjacently arranged;
  - 15 (c) said generally rigid plate-sections are made of a material thermally expandable upon exposure to a range of temperatures to which the confined area may be exposed; and
  - (d) a flexible barrier, made of a material having resiliency and adapted to produce a generally water-impermeable seal, selected from the group consisting of a
  - 20 gasket tape, a joint sealant, a plastic adhesive, a caulking compound, weather stripping, and a high temperature sealant, is interposed between said interior perimeter and at least a portion of a periphery of a sub-assembly having a spray nozzle.
- 25 9. The segmented plate of claim 8 wherein:
- (a) said inner perimeter comprises a first edge-boundary of a first of said plate-sections;
  - (b) said first edge-boundary is arranged, in water-impermeable fashion, adjacent said periphery of said sub-assembly; and
  - 30 (c) said material for said generally rigid plate-sections is selected from the group consisting of a metal, an alloy, and a ceramic.

10. A segmented plate adapted for assembly within a chamber of a deaerator tank having a limited access thereto, comprising:

- (a) the plate, as assembled to enclose a tray assembly, having  
an exterior perimeter,  
a plurality of generally rigid plate-sections, and  
extending at least partially along adjacent boundaries of said plate-sections having been adjacently arranged, is a self-lock seam; and
- (b) each of said plate-sections sized smaller than the access to permit passage therethrough for the assembly.

11. The segmented plate of claim 10, having been assembled and secured to so enclose said tray assembly, further comprising:

- (a) an aperture having an inner perimeter comprising a first edge-boundary of a first of said plate-sections;
- (b) a first collar piece arranged, in water-impermeable fashion, adjacent said first edge-boundary; and
- (c) said first collar piece is further arranged around a periphery of a sub-assembly having a vent passage therethrough.

12. The segmented plate of claim 11 wherein:

- (a) said inner perimeter further comprises a second edge-boundary of a second of said plate-sections;
- (b) a second collar piece is arranged, in water-impermeable fashion, adjacent said second edge-boundary;
- (c) said second collar piece is further arranged around said periphery of said sub-assembly; and
- (d) said sub-assembly further comprises a spray nozzle.

13. The segmented plate of claim 10, having been assembled, and wherein:

- (a) said exterior perimeter is of a final geometric size larger than may pass through the limited access;
- (b) said self-lock seam comprises an interlocking of an U-shaped edge of each said plate-section adjacently arranged;

(c) said exterior perimeter is of a shape selected from the group consisting of an oval, a circle, a polygon, and an irregular shape; and

(d) a flexible barrier, made of a material having resiliency and adapted to produce a generally water-impermeable seal, selected from the group consisting of a gasket tape, a joint sealant, a plastic adhesive, a caulking compound, weather stripping, and a high temperature sealant is interposed between said exterior perimeter and a tray enclosure.

**14.** The segmented plate of claim 13:

(a) further comprising an aperture having an inner perimeter comprising an inward-boundary of each of a first and second of said plate-sections, said inner perimeter is of a shape selected from the group consisting of an oval, a circle, a polygon, and an irregular shape;

(b) a third and fourth of said plate-sections each comprise a respective third and fourth edge-boundary; and

(c) said adjacent boundaries comprise

said third edge-boundary adjacent a first edge-boundary of each of said first and second plate-sections, and

said fourth edge-boundary adjacent a second edge-boundary of each of said first and second plate-sections.

**15.** A process for assembling a segmented plate within a confined area having a limited access thereto, comprising:

(a) passing each of a plurality of generally rigid plate-sections through the limited access;

(b) adjacently arranging at least two of said plate-sections, by interlocking a U-shaped edge of said two plate-sections generally along adjacent boundaries thereof; and

(c) constructing the segmented plate whereby a final geometric size of an exterior perimeter thereof is larger than may pass through the limited access.

**16.** The process of claim 15:

(a) wherein said step of adjacently arranging further comprises

arranging a third edge-boundary of a third of said plate-sections adjacent a first edge-boundary of each of a first and second of said plate-sections, and

arranging a fourth edge-boundary of a fourth of said plate-sections adjacent a second edge-boundary of each of said first and second plate-sections; and

(b) further comprising the step of arranging first and second collar pieces, in water-impermeable fashion, adjacent a respective first and second inward-boundary of each said first and second plate-sections.

17. The process of claim 16 further comprising the steps of:

(a) arranging said collar pieces, each of which comprises a curvature, around a periphery of a central sub-assembly having a spray nozzle therethrough;

(b) arranging first and second top supports around said periphery of said central sub-assembly sandwiching a portion of said first and second inward-boundaries of each said first and second plate-sections between said first and second top supports and said first and second collar pieces; and

(c) securing said first and second top supports, effecting a water-impermeable seam.

18. The process of claim 16:

(a) wherein the confined area comprises a chamber of a deaerator tank; and said step of arranging first and second collar pieces further comprises, first, applying a flexible barrier made of a material selected from the group consisting of a gasket tape, a joint sealant, a plastic adhesive, a caulking compound, weather stripping, and a high temperature sealant, to said respective inward-boundaries, and then so arranging said collar pieces to produce a generally water-impermeable seal; and

(b) further comprising the step of securing the assembled sectioned plate to enclose a tray assembly adapted for use in carrying out deaerating.

19. The process of claim 15:

(a) wherein said step of adjacently arranging further comprises arranging a third edge-boundary of a third of said plate-sections adjacent a first edge-boundary

of each of a first and second of said plate-sections, said first plate-section oriented with a first inward-edge-boundary creating an opening in said exterior perimeter, and

(b) further comprising the steps of arranging a collar piece adjacent said first inward-edge-boundary and around at least a portion of a periphery of a sub-assembly having a spray nozzle.

**20. The process of claim 15:**

(a) wherein said step of adjacently arranging further comprises

arranging a third edge-boundary of a third of said plate-sections adjacent a first edge-boundary of each of a first and second of said plate-sections,

arranging a fourth edge-boundary of a fourth of said plate-sections adjacent a second edge-boundary of each of said first and second plate-sections, and

said first and second plate-sections oriented with a respective first and second curved inward-boundary creating an aperture within the segmented plate; and

(b) further comprising the step of sandwiching, between a first collar piece and a first top support, a portion of said third edge-boundary, a portion of said first curved inward-boundary, and a portion of said second curved inward-boundary.

**21. A segmented plate adapted for assembly within a confined area having a limited access thereto, comprising:**

(a) the plate, as assembled, having

an exterior perimeter,

an aperture having an inner perimeter,

a plurality of generally rigid plate-sections, and

interposed between and along adjacent boundaries of said plate-sections having been adjacently arranged, is a flexible barrier; and

(b) each of said plate-sections sized smaller than the access to permit passage therethrough for the assembly.

**22.** The segmented plate of claim 21 wherein:

(a) the confined area comprises a chamber of a deaerator tank;

(b) a first, second, third and fourth of said plate-sections each comprise a respective third and fourth edge-boundary;

5 (c) said adjacent boundaries comprise

said third edge-boundary adjacent a first edge-boundary of each of said first and second plate-sections, and

said fourth edge-boundary adjacent a second edge-boundary of each of said first and second plate-sections; and

10 (d) said flexible barrier is made of a material having resiliency and adapted to produce a generally water-impermeable seal, selected from the group consisting of a gasket tape, a joint sealant, a plastic adhesive, a caulking compound, weather stripping, and a high temperature sealant.